Fig. 1

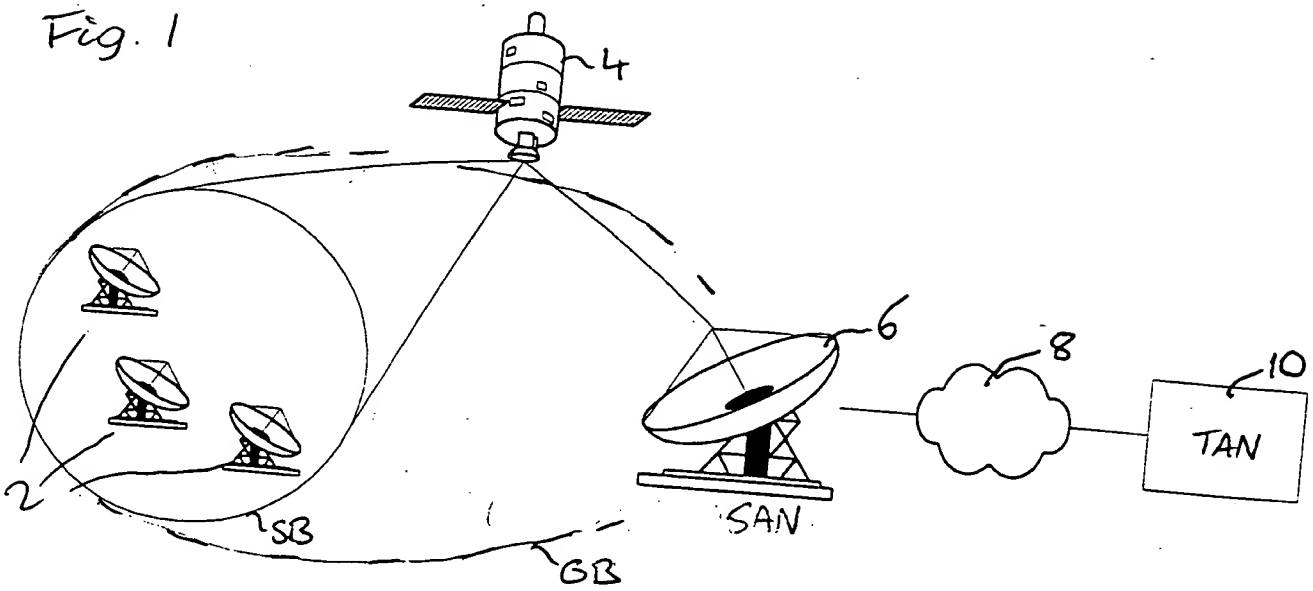
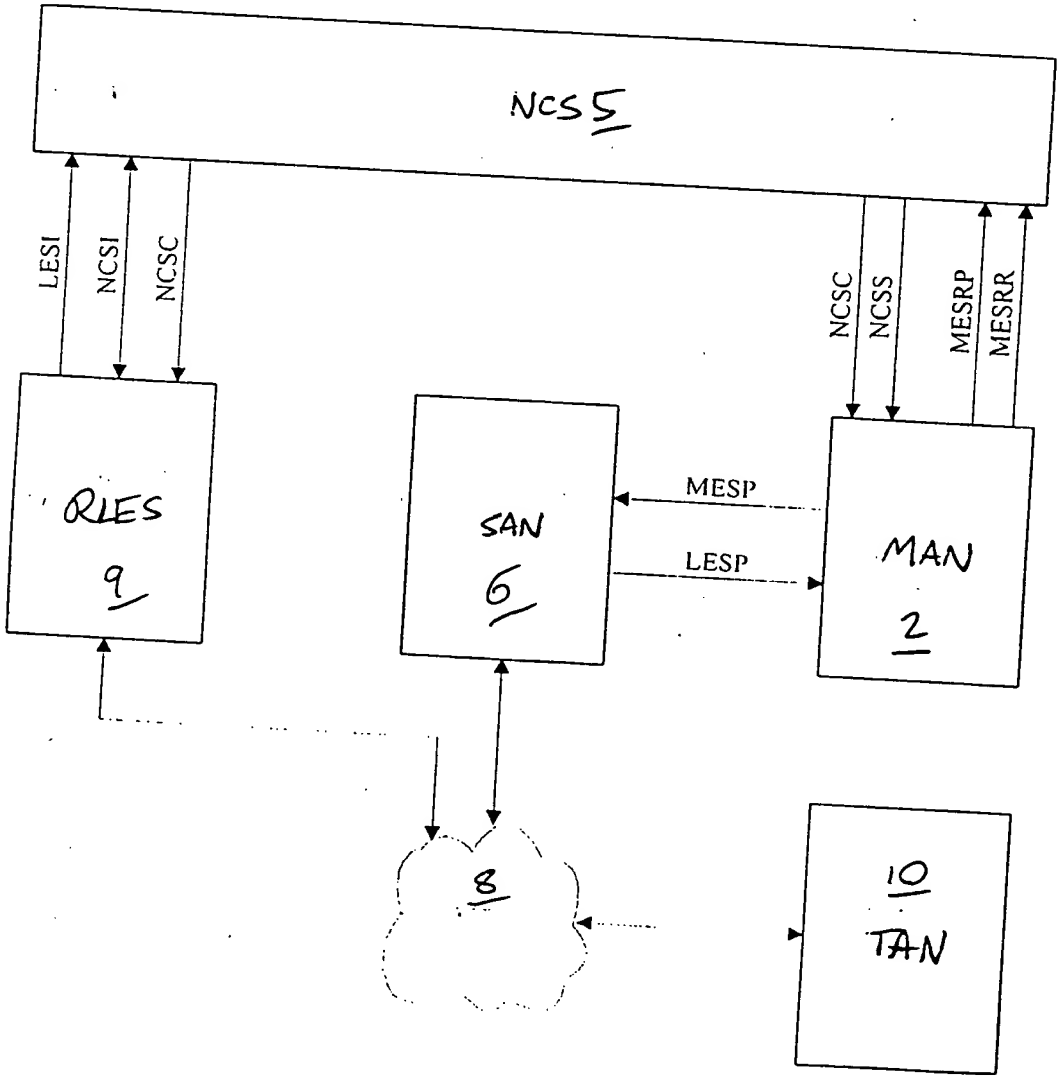
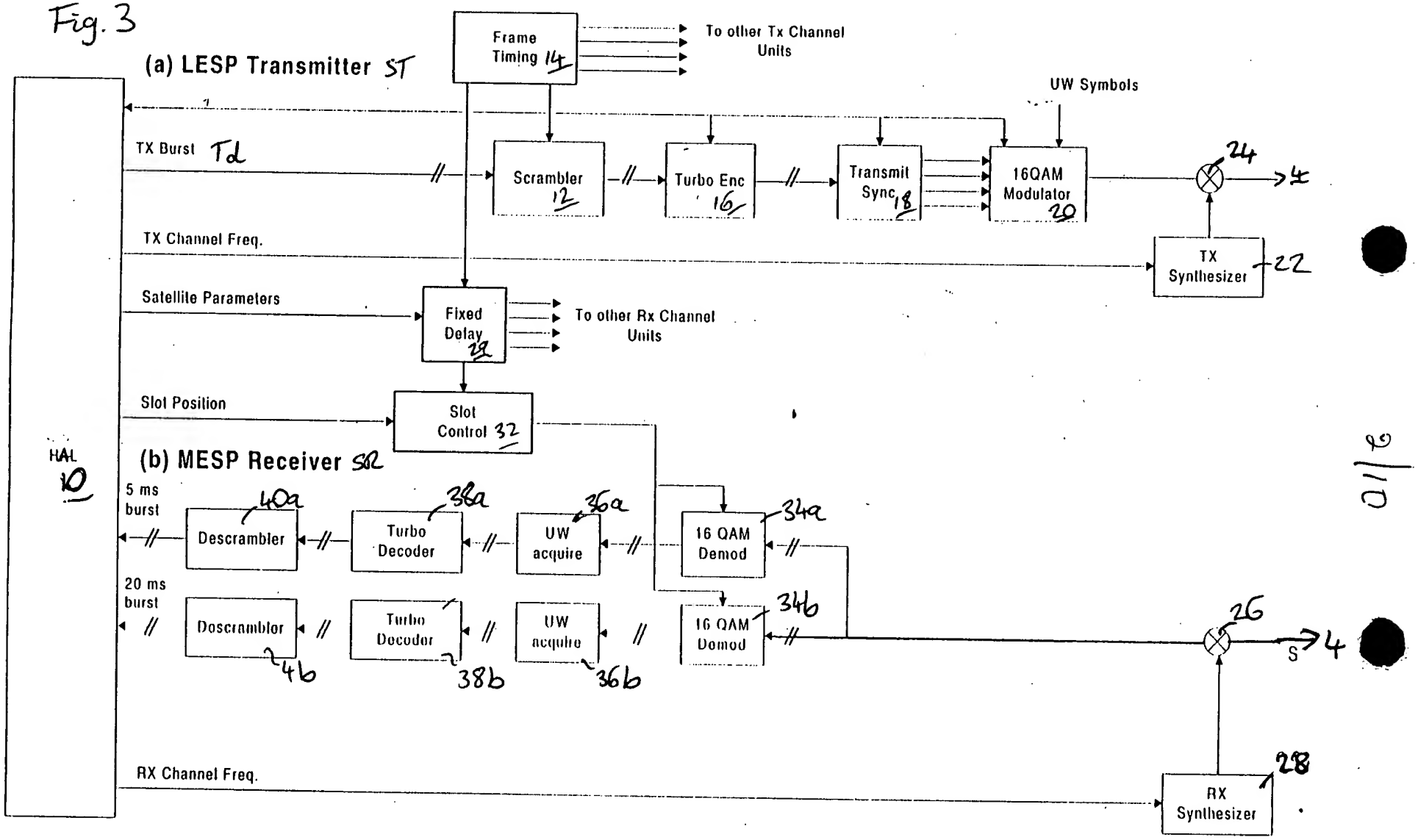

4
6
8
10
TAN
2
SB
GB
SAN

Fig. 2


NCS 5
LESI
NCSI
NCSC
NCSC
NCSS
MESRP
MESRR
RLES 9
SAN 6
MESP
LESP
MAN 2
8
10 TAN

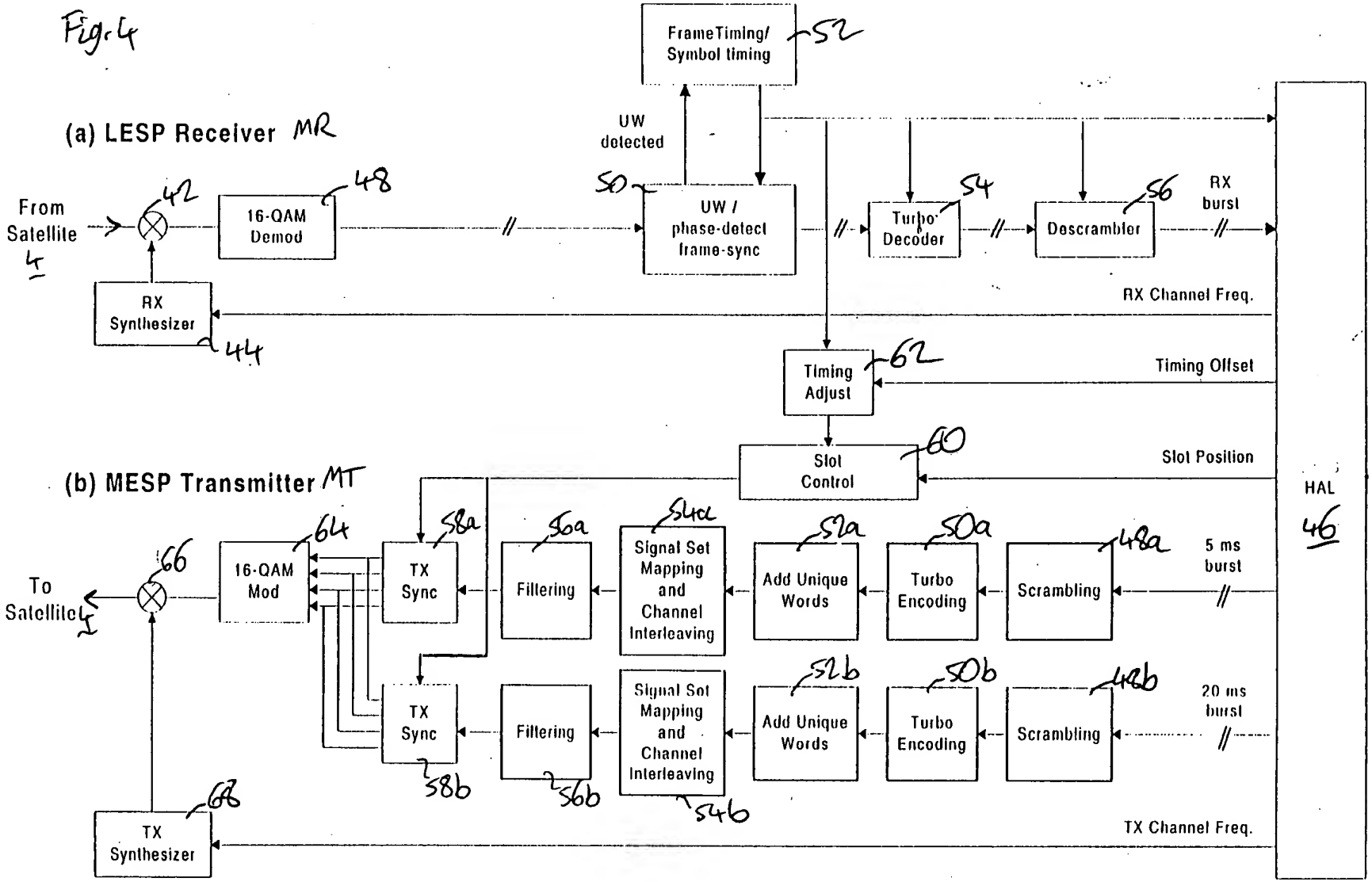
DRAFT SUBMITTED

Fig. 3



BEST AVAILABLE COPY

Fig. 4



—//— : Parallel interface

Fig. 5a

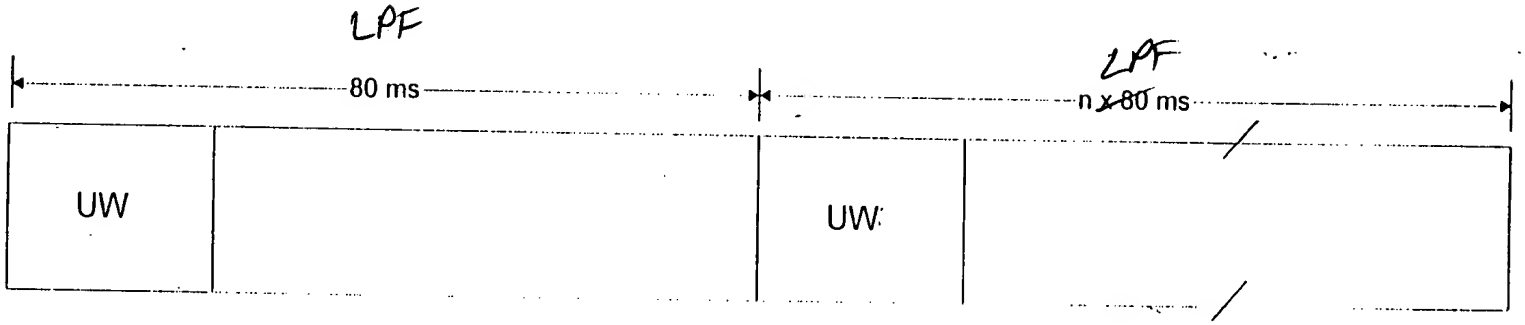
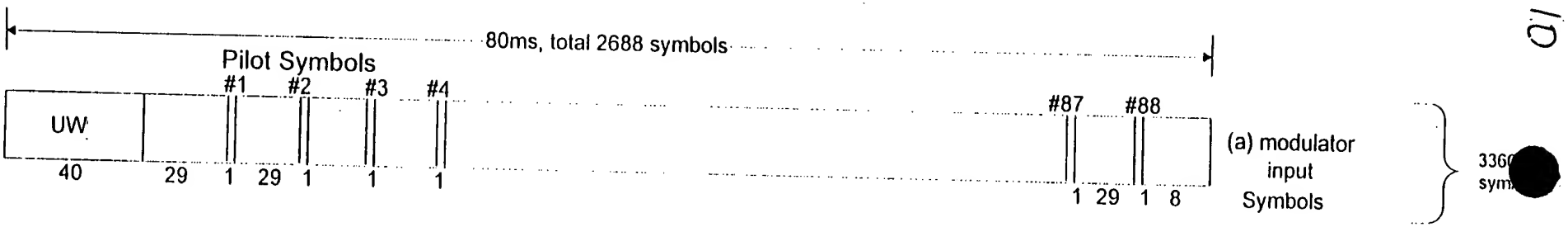

LPF
80 ms
LPF
n x 80 ms
UW
UW

Fig. 5b


80ms, total 2688 symbols
Pilot Symbols
#1
#2
#3
#4
#87
#88
UW
40
29
1
29
1
1
1
1
29
1
8
(a) modulator input Symbols

6951 [illegible]

Fig 5c

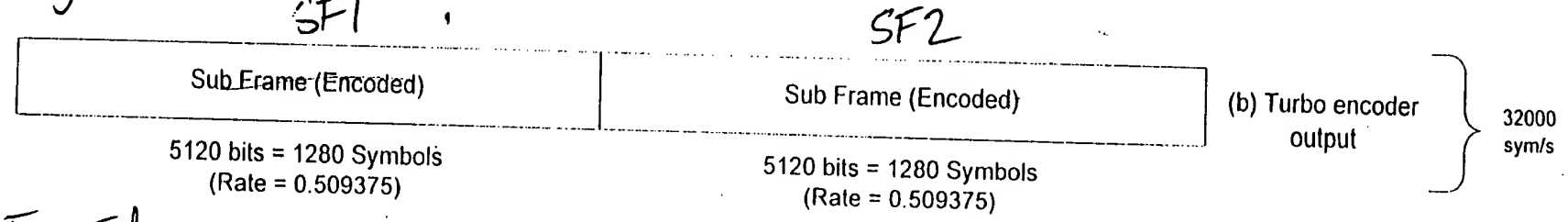
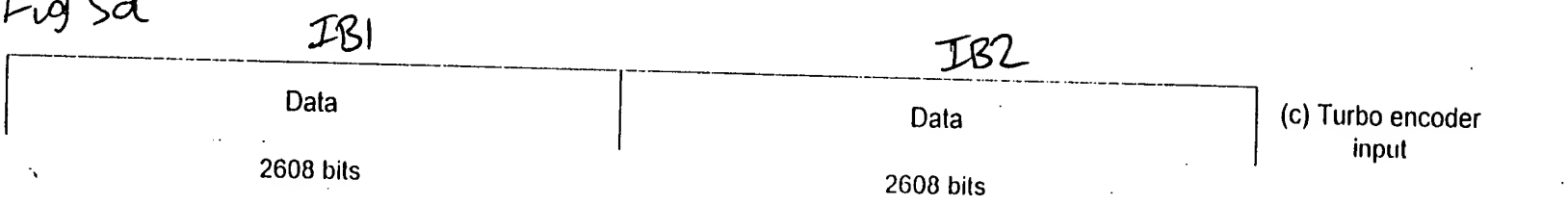


Fig 5d



COPY

Fig.6a

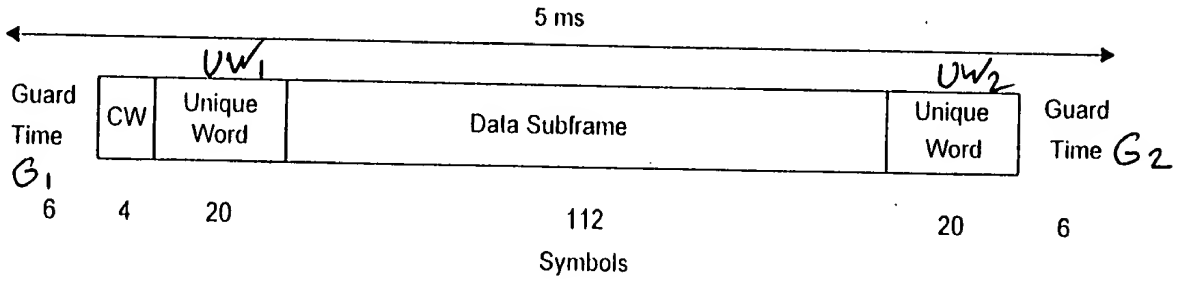
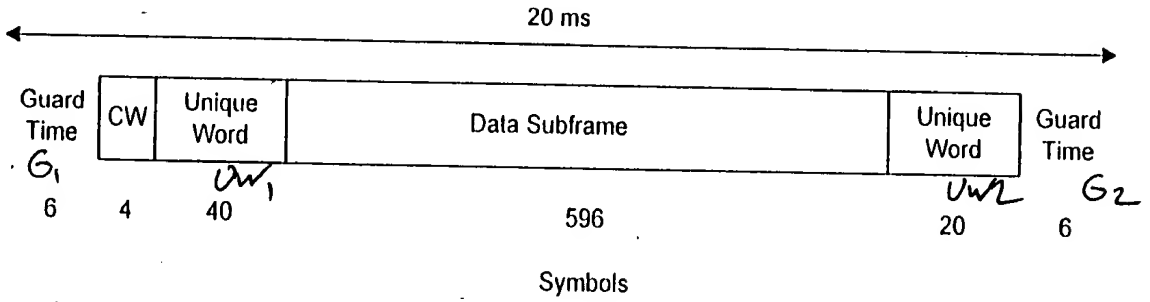
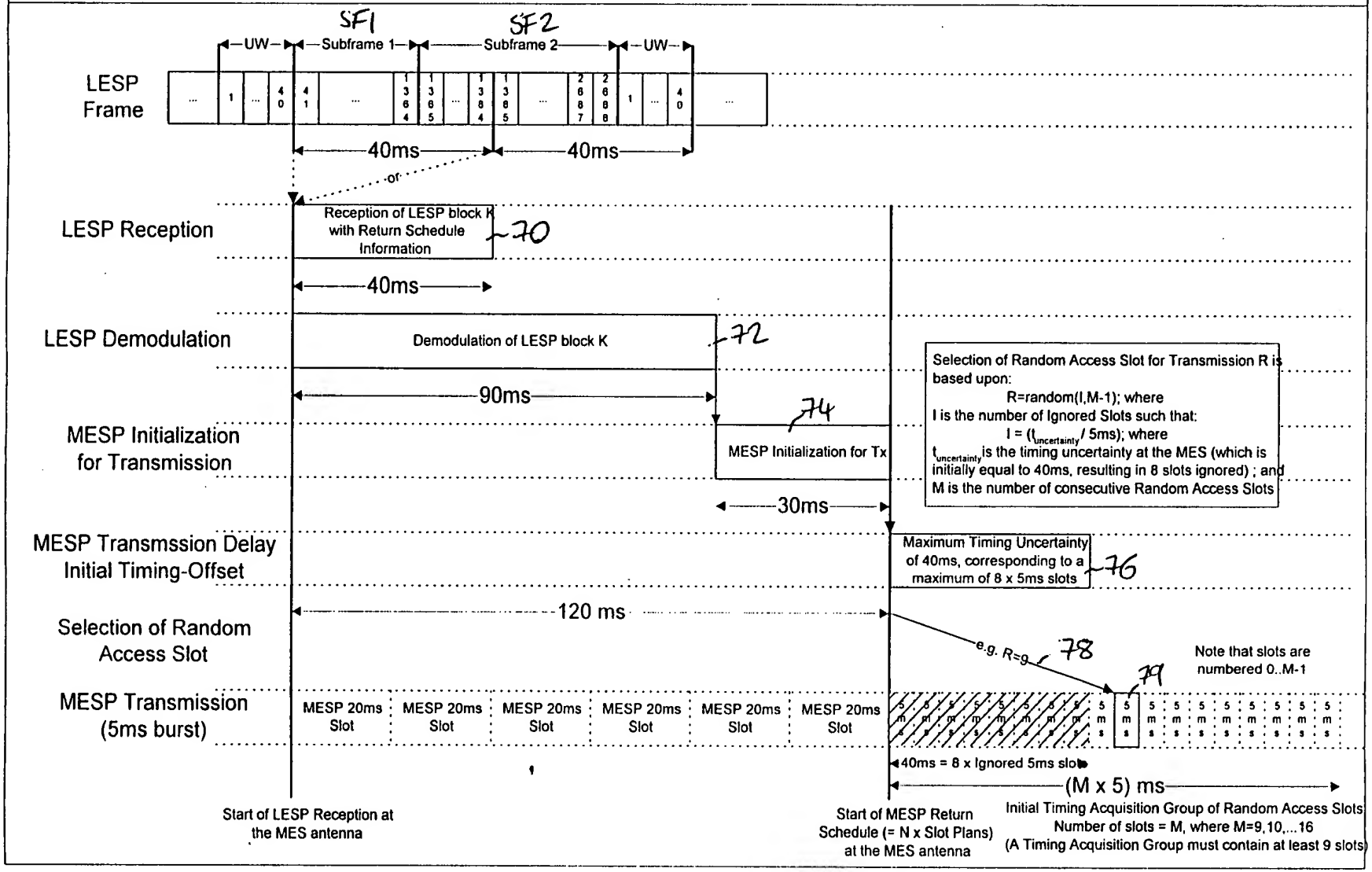


Fig.6b



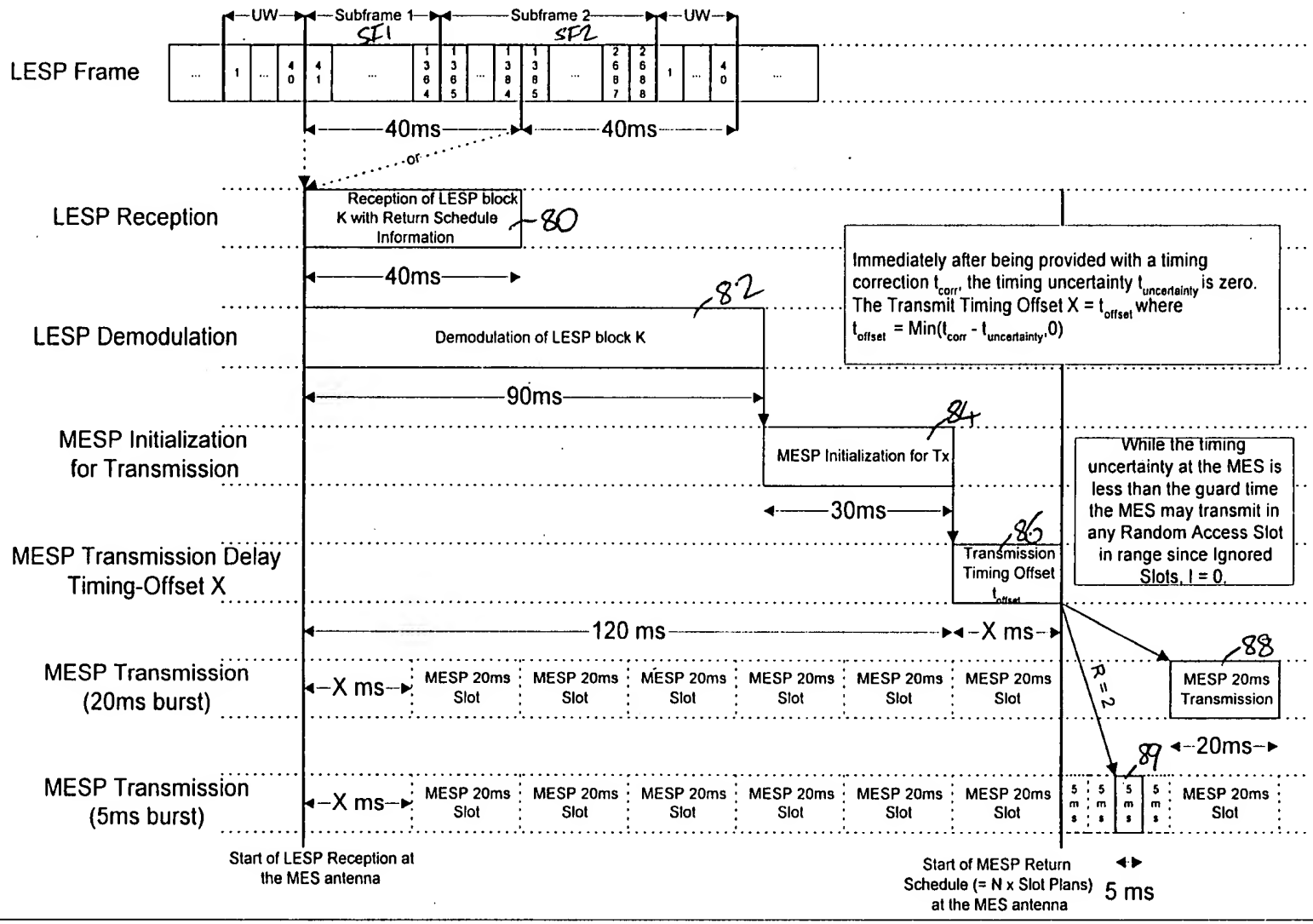
0691 1 1 assigned

Fig.7



BEST AVAILABLE

Fig. 8a



8/10

Fig. 8b

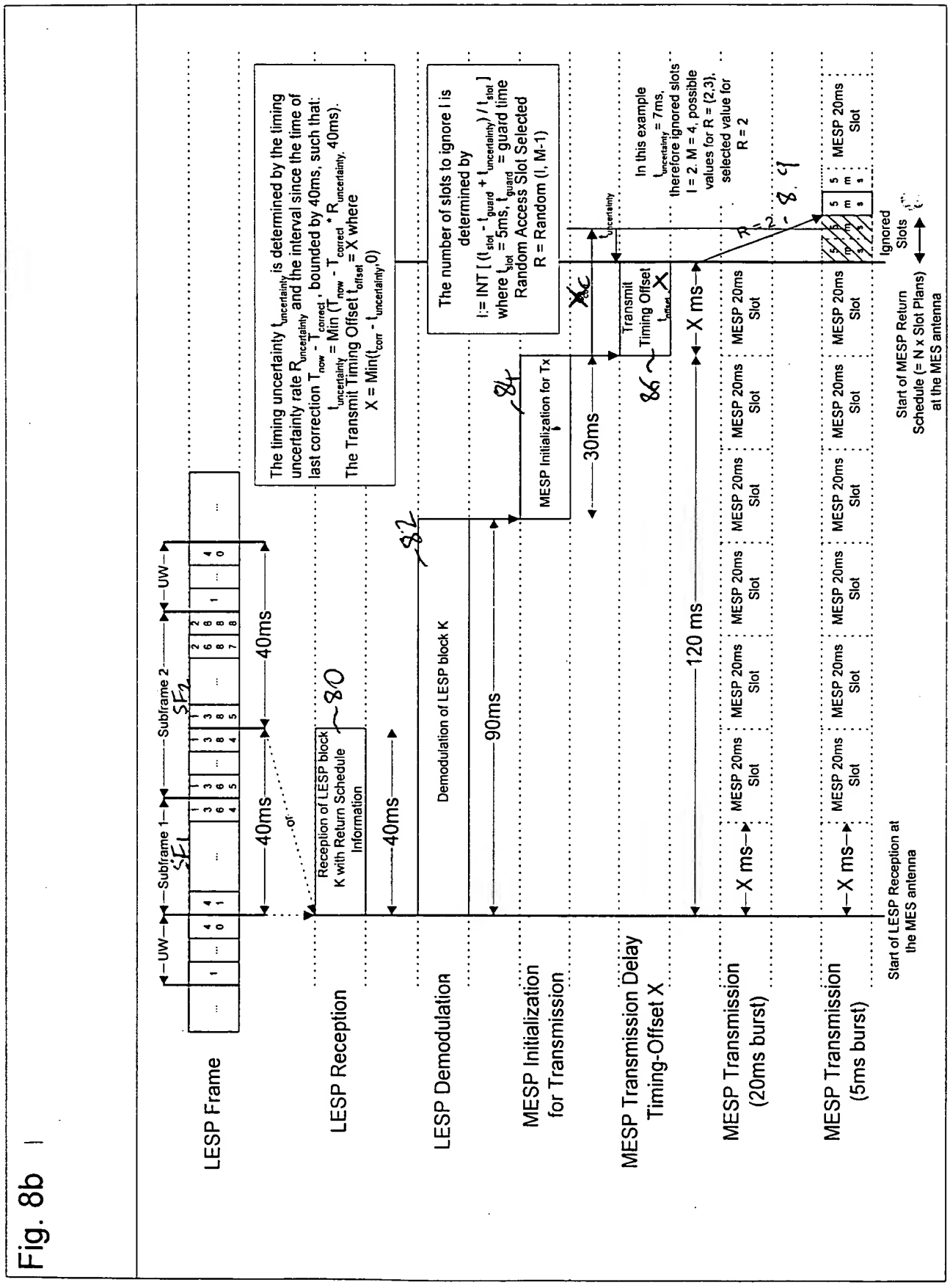

LESP Frame
UW
Subframe 1
Subframe 2
40ms
40ms
or
LESP Reception
Reception of LESP block K with Return Schedule Information
40ms
LESP Demodulation
Demodulation of LESP block K
90ms
MESP Initialization for Transmission
MESP Initialization for Tx
30ms
MESP Transmission Delay Timing-Offset X
Transmit Timing Offset
120 ms
MESP Transmission (20ms burst)
X ms
MESP 20ms Slot
MESP Transmission (5ms burst)
X ms
MESP 20ms Slot
Start of LESP Reception at the MES antenna
The timing uncertainty $t_{uncertainty}$ is determined by the timing uncertainty rate $R_{uncertainty}$ and the interval since the time of last correction $T_{now} - T_{correct}$, bounded by 40ms, such that:
$t_{uncertainty} = Min\ (T_{now} - T_{correct} * R_{uncertainty}, 40ms)$.
The Transmit Timing Offset $t_{offset} = X$ where
$X = Min(t_{corr} - t_{uncertainty}, 0)$
The number of slots to ignore I is determined by
$I := INT\ [\ (t_{slot} - t_{guard} + t_{uncertainty}) / t_{slot}\ ]$
where t_{slot} = 5ms, t_{guard} = guard time
Random Access Slot Selected
R = Random (I, M-1)
In this example $t_{uncertainty}$ = 7ms, therefore ignored slots I = 2. M = 4, possible values for R = {2,3}, selected value for R = 2
Ignored Slots
Start of MESP Return Schedule (= N x Slot Plans) at the MES antenna

Fig.9

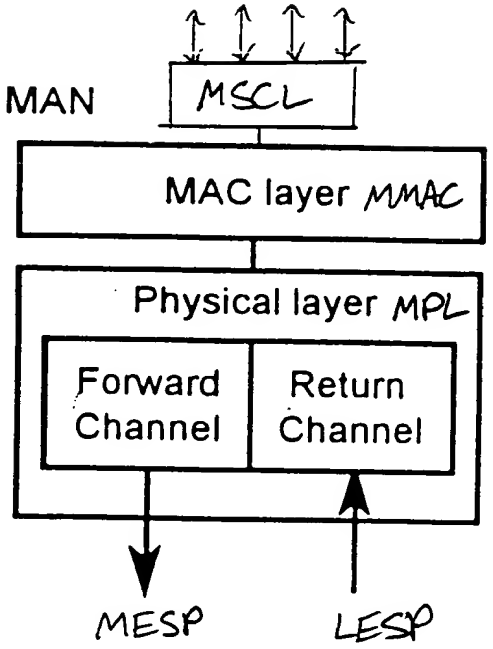
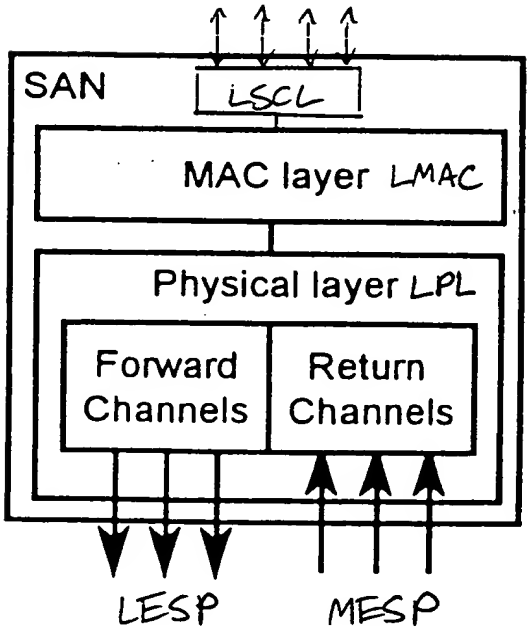

MAN
MSCL
MAC layer MMAC
Physical layer MPL
Forward Channel
Return Channel
MESP
LESP

Fig.10


SAN
LSCL
MAC layer LMAC
Physical layer LPL
Forward Channels
Return Channels
LESP
MESP